

**PATENT**  
**EJ 8313 91895US**  
**Docket Number: 010286**

**GENERATING LOCAL OSCILLATOR SIGNALS FOR DOWNCONVERSION**

**ABSTRACT**

[0040] A local oscillator signal for direct downconversion is generated using an upper frequency oscillator signal and a lower frequency oscillator signal, both of which have frequencies different from a frequency of an RF input signal. The local oscillator signal thus generated has a frequency that is either the sum or the difference of the frequencies of the upper and lower frequency oscillator signals. As a result, the risk of local oscillator signals re-radiating and coupling the RF signal input is significantly reduced. In addition, in QPSK systems, a quadrature local oscillator signal can be generated with accurate phasing relative to an in-phase local oscillator signal.

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